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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,629	01/14/2002	Yuzuru Suzuki	SUM-02301	4803

7590

04/01/2002

Patent Group
Hutchins, Wheeler & Dittmar
101 Federal Street
Boston, MA 02110

EXAMINER

PEREZ, GUILLERMO

ART UNIT PAPER NUMBER

2834

DATE MAILED: 04/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,629

Applicant(s)

SUZUKI ET AL.

Examiner

Guillermo Perez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki (U. S. Pat. 5,128,570) in view of Mizutani et al. (U. S. Pat. 4,823,038) in and further in view of E. S. Beyers (U. S. Pat. 3,525,005).

Isozaki substantially teaches the claimed invention except that it does not show that the cylindrical field magnet is fixed to holder means into which a rotating shaft is press-fitted at a center thereof. Isozaki does not disclose that the cylindrical field magnet being magnetized such that S and N poles alternate with each other in a circumferential direction thereof.

Mizutani et al. disclose that the cylindrical field magnet (21) is magnetized such that S and N poles alternate with each other in a circumferential direction thereof, wherein each of the S and N poles has a plurality of stages (21a,21b) formed in an axial direction and shifted from each other in the circumferential direction of the field magnet (21) with a predetermined shift amount. The invention of Mizutani et al. has the purpose of increasing the torque capacity of the motor.

E. S. Beyers discloses that the field magnet (20) is fixed to holder means (18,26,24) into which a rotating shaft (16) is mounted at a center thereof. E. S. Beyers' invention has the purpose of maintaining a substantially constant voltage over a wide range of speeds.

It would have been obvious at the time the invention was made to modify the motor of Isozaki and provide it with the cylindrical field magnet configuration and the holder means disclosed by Mizutani et al. and E. S. Beyers for the purpose of increasing the torque capacity of the motor; and maintaining a substantially constant voltage over a wide range of speeds.

Referring to claim 1, no patentable weight has been given to the method of manufacturing limitations (i. e. "press-fitted") since "even though product-by-process

claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to shift the respective stages within a range of 12° to 50° in an electrical angle since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the stator with eight poles and six stator units in which basic degree of a cogging torque thereof is 24 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki in view of Mizutani et al. in and further of E. S. Beyers as applied to claim 1 above, and further in view of Hoemann et al. (U. S. Pat. 5,034,642).

Isozaki, Mizutani et al. and E. S. Beyers substantially teaches the claimed invention except that it does not show that a rotor position detection element is adjusted by 1/2 the shift amount of respective stages.

Hoemann et al. disclose that a rotor position detection element (17) is adjusted by 1/2 the shift amount of respective stages (25,27 and figures 3-7). The invention of Hoemann et al. has the purpose of maintaining an optimum sensor position relative to the rotor field without requiring physical adjustment of the sensor.

It would have been obvious at the time the invention was made to modify the motor of Isozaki, Mizutani et al. and E. S. Beyers and provide it with the sensor configuration disclosed by Hoemann et al. for the purpose of maintaining an optimum sensor position relative to the rotor field without requiring physical adjustment of the sensor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the detection element by 1/2 the shift amount of respective stages since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

3. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki in view of Mizutani et al. in and further of E. S. Beyers as applied to claim 1 above, and further in view of Nakagawa (U. S. Pat. 5,334,894).

Isozaki, Mizutani et al. and E. S. Beyers substantially teaches the claimed invention except that it does not show that the DC motor is an outer rotor type brushless DC motor.

Nakagawa discloses that the DC motor is an outer rotor type brushless DC motor (figure 45). Nakagawa's invention has the purpose of showing the state of the art for electric motors of the same type having different configurations while still being able to operate identically.

It would have been obvious at the time the invention was made to modify the motor of Isozaki, Mizutani et al. and E. S. Beyers and provide it with an outer rotor type motor configuration as disclosed by Nakagawa for the purpose of showing that the electric motors can have different rotor configurations and still be able to operate identically.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
March 21, 2002


BURTON S. MULLINS
PRIMARY EXAMINER